

Transportation Air Quality and MOVES Training

Module 5: Practical Applications

Note: This material is part of a five module training course prepared by the Texas A&M Transportation Institute (TTI) for the Texas Department of Transportation. Please review the training description document for further details and for TTI contact information

Objective

MOVES
Applications

TWG
Support

Current
Statewide
Works

Date Request
Process

Take Home
Points

Hypothetical
Scenarios

MOVES Applications

State Implementation Plan (SIP)

- *Attainment Demonstration SIP*
- *Reasonable Further Progress SIP*

Regional Transportation Conformity

Project Level Analysis

- *Mobile Source Air Toxics*
- *GHG*
- *CO & PM Hotspot*

Alternative Scenarios

- *Mobility Plan Analysis*
- *What-if Scenarios*

Trend Analysis

Emission Reduction Measure Analysis

- *Congestion Mitigation and Air Quality Reporting*
- *Project Selection (Cost-Effectiveness)*

Texas Working Group Support

TxDOT

Emission Rates Lookup Tables
Activity
Conformity Support

TCEQ

State Implementation Plan
Control Programs and Strategies

FHWA/EPA

Regulations & Guidance



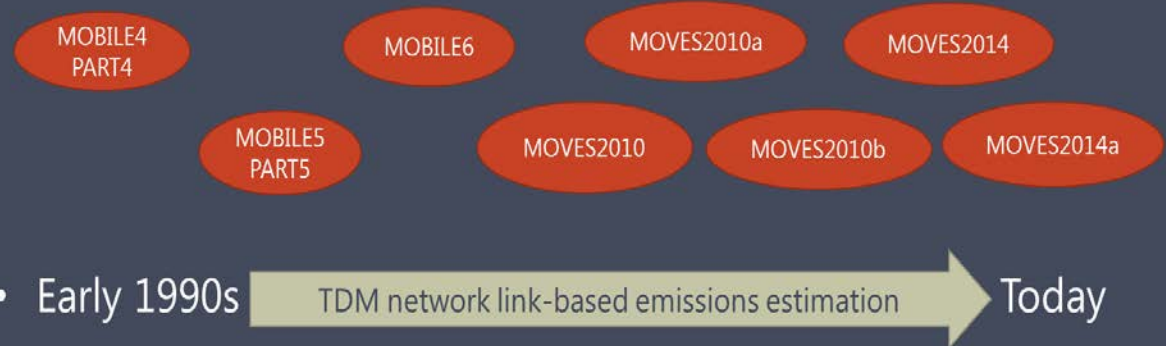
TTI Assistance

TxDOT IAC

Nonattainment and Near-nonattainment Areas

- Onroad Emissions Modeling
- Modeling Inputs Development
- Modeling Tools
- Refining the Modeling Process and Inputs
- Training

- TTI's on-road emissions modeling support of Texas SIP and conformity analyses



Current Statewide Works

Air Emissions Reporting Rule (AERR)

State Implementation Plan (Plan)

Trend Inventories

CO and MSAT (TxDOT)

Other Policy Analysis



!!!No Need to Reinvent the Wheel !!!

Data Request- Response Process

Data Request

Who

- Intended application/audience

When

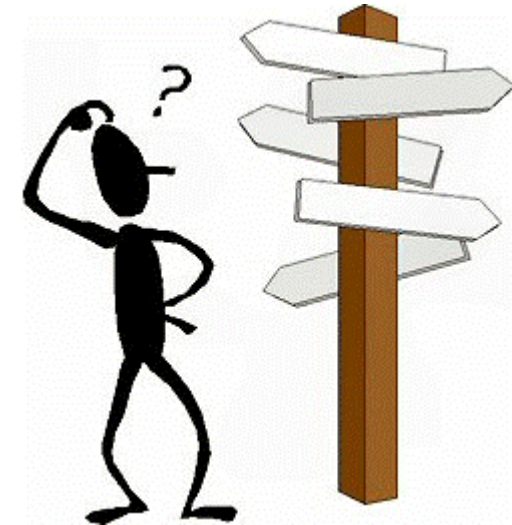
- Deliverable due date

What

- Analyze the problem/request

How

- Bottom-up or top down approach
- This is dictated by all the previous answers



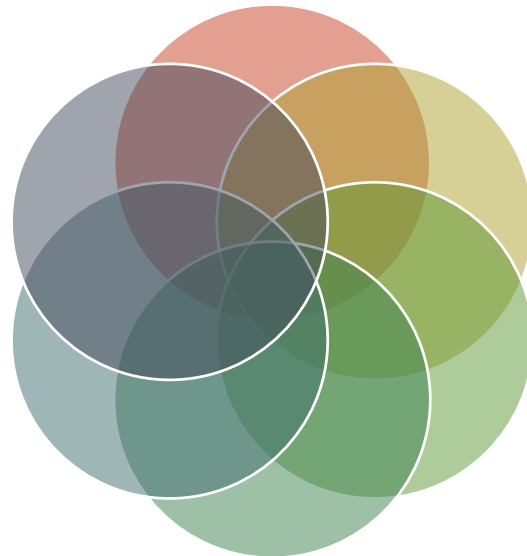
Take Home Points

Understand the Problem

- Try to Make it Simple

Explore Previous Works

Reach Out to TWG Members



Disclaimer

Quality Check- Measure Twice and Cut Once

- Internal
- External (TWG)

Consistency is Important

- Information
- Process





Hypothetical Scenarios

Exercise Guidelines



Scenario 1 – Grant Application

One of your local governments is working on a grant proposal to replace 5 diesel school buses within their ISD with newer gasoline buses. They have reached out to the MPO for assistance to estimate potential NOx emissions benefits with the project

Data Provided:

- Old vehicles (diesel): 3 1990 MY, 2 1994 MY
- Purchasing Vehicle: 5 2018 MY
- Average Miles = 12,000/year
- Operating
 - Pattern (80% Arterial, 20% Freeway)
 - Area Type is Urban
 - Average Speed (Freeway 55 mph, Arterial 35 mph)

Tip !!! Use the school rates table provided in the in the exercise folder under Module 5

Scenario 2 – Bexar County Trend

You are providing a presentation for a stakeholder who are interested in Bexar County growth in transportation. Your boss wants to include a slide which shows Bexar County's emissions and activity trends.

TIP: Use this website- <http://txaqportal.org/Trends.aspx>

Scenario 3 – Mobility Plan Alternative Scenario

The policy board is interested in exploring sustainability projects in the vision plan as a option. The MPO has included the sustainability projects in the travel demand model and estimated travel benefits/impacts. The policy board also want to see air quality impacts. You will take this topic as an information item to the next policy board meeting.

Options:

- Detailed Analysis (link base inventory)
- Midlevel (Sketch Analysis)
- **Simple Analysis (summary information)**

Note: TDM Results from the alternative scenario is available

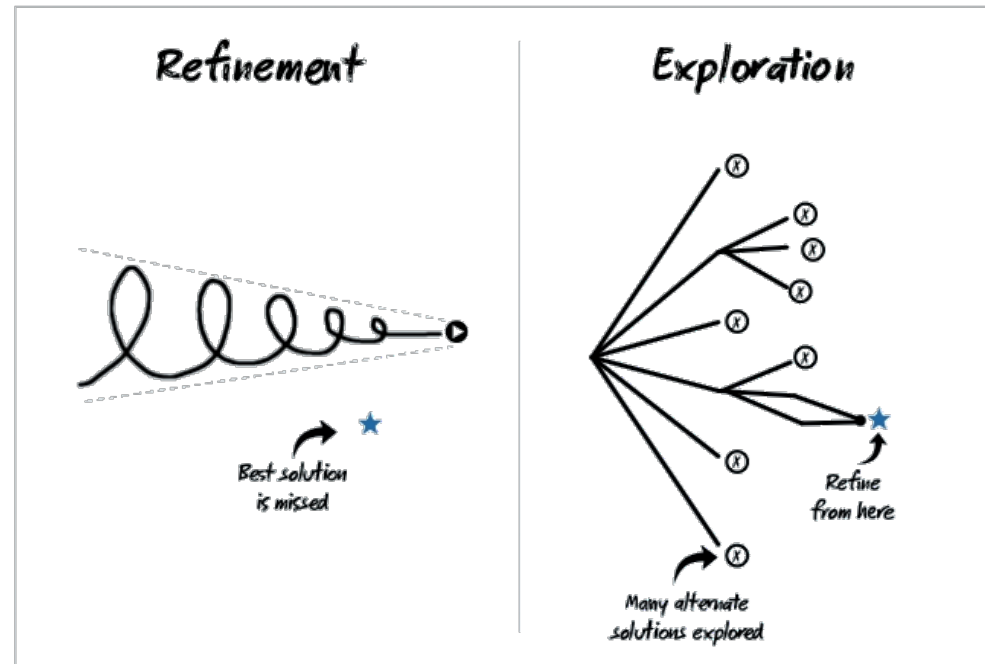
Scenario 3 - Information

Analysis year 2020

Calculate light duty vehicle (cars & trucks) emissions reduction using following information:

- VMT dropped 10% on unrestricted access

- Starts decreased by 10%



Any Scenarios You Want to Explore

Scenario 4 – Extended Idling

A local government is considering proposing an ordinance regulating heavy-duty diesel truck idling emissions at local truck stops. A request has been made to the MPO to estimate the potential NOx emissions benefits.

Data Provided:

- Sourceusetype: diesel combination long-haul trucks
- 2 truck stops:
 - 20 parking spaces each
 - 8 hours
 - 60% occupancy rate
 - 80% idling rate per space
- Electrification is provided at all parking spaces

Tip: Use available data sources to estimate the idling rate

Resources

- TWG – Transportation Air Quality Portal
 - <http://txaqportal.org/Trends.aspx>
- TxDOT - Air Quality Toolkit
 - <https://www.txdot.gov/inside-txdot/division/environmental/compliance-tools/e-toolkits/air-quality.html>
- TCEQ – Onroad
 - <ftp://amdaftp.tceq.texas.gov/pub/EI/onroad/>



!!! Knowing
Where to Find
is the Key!!!